Shaughnessy No.: 081501

Date Out of EAB: JUN 20 1986

To: Walter Francis
Product Manager #32
Registration Division (TS-767)

From: Emil Regelman, Supervisory Chemist
Review Section #3
Exposure Assessment Branch
Hazard Evaluation Division (TS-769)

Attached, please find the EAB review of...

Reg./File # : 5785-58

Chemical Name: Trichloronitromethane

Type Product : Soil Fumigant

Product Name : Chloropicrin

Company Name : Great Lakes Chemical Corp.

Purpose : Response to the Registration Standard dated 9-10-82

Action Code(s): 661

EAB #(s) : 6233

Date Received: 1/13/86

TAIS Code: 44

Date Completed: 6/17/86

Total Reviewing Time: 2.0 days

Monitoring Study Request

Monitoring Study Voluntarily

Deferrals to:

_____ Ecological Effects Branch

_____ Residue Chemistry Branch

_____ Toxicology Branch

REGISTRATION DIVISION DATA REVIEW RECORD
--TO BE USED FOR REVIEW OF STUDIES PPA ONLY--

Confidential Business Information—
Does Not Contain National Security Info. (E.O. 12065)

(HED PROVIDE) PACK No.: 12846
1-13-86

(RD PROVIDE) SHAUGNESSY NO.
081501

Chloropicrin

	Reference Number	Record Number	Study Guideline or Narrative Description	Reg. Std. Review Submission Criteria (SEE BELOW)	Accession Number	(RSERB Provide) MRID Number	(HED/BUD/TSS Complete) Review Results: Acceptable (A)/ Unacceptable(U)
1	2	165,230	Environ. Chem	3	260211		

...M) or REVIEW MANAGER (RM) AND NUMBER: ...lo PM-32

PM/RM TEAM MEMBER AND NUMBER: Walter C. Francis (32)

...: 01/08/86

RD BRANCH CHIEF INITIALS:

...BOX:

...verse 6(a)(2) Data	(405,406)	☐ Data Waiver Request (Reregistration)	(650,651)
...spect Data	(415,416)	☐ Formulation Data and Labeling (Reregistration)	(655,656)
...t Data	(485,486)	☒ Generic Data (Reregistration)	(660,661)
...roundwater Data	(495,496)	☐ Special Review Data	(870,871)

AH

...DUAL STUDIES SUBMITTED: 8

TO BE COMPLETED BY RSERB

DATE SENT TO HED/BUD/TSS: 01-10-86

PRIORITY NUMBER: 50

PROJECTED RETURN DATE: 03-11-86

DATE RETURNED TO RD (HED/BUD/TSS PROVIDE):

...ttn: Emil Regelman
...cussion of 1-8-86, attached is a complete ... Submitted in response to the Chloropicrin Standard. Toxicology Branch has indicated ...eview is necessary prior to their ...n of whether chronic or subchronic ...ll be required for this chemical.

...:

...TB ☐RCB ☐EAB ☐EEB RD: ☐TSS BUD: ☐EAB ☐SSB

REVIEW	NUMBER OF ACTIONS: Reregistration	Special Review	Other
...ogy			
...cal Effects			
... Chemistry			
...e Assessment	1		
... Chemistry			
...y			
...tionary Labeling/Acute Tox.			
...e Support			
...ic Analysis			

FOR DATA SUBMITTED UNDER A REGISTRATION STANDARD:
Review Submission Criteria

Policy Note #31

1 = data which meet 6(a)(2) or meet 3(c)(2)(B) flagging criteria

2 = data of particular concern

3 = data necessary to determine tiered testing requirements

NOTE TO TSS:
Return 1 Copy To RSERB

...E AN ORIGINAL AND FOUR (4) COPIES OF THIS COMPLETED FORM FOR EACH BRANCH CHECKED FOR REVIEW.

1. CHEMICAL: Common name:

Chloropicrin

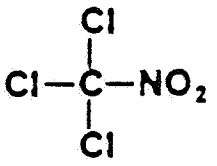
Chemical name:

Trichloronitromethane

Trade name(s):

Acquinite, Chlor-O-Pic, Dojyopicrin, Dolochlor, Larvacide, Pic-Clor, Picfume, Profume A, Tri-clor

Structure:



Formulations:

96.5%, 98.2%, and 99% RTU, 99% PrL

Physical/Chemical properties:

Physical state: Heavy, nonflamable, colorless, slightly oily liquid.
Emperical Formula: CCl_3NO_2
Molecular Weight: 164.4
Melting point: -64°C
Boiling point: 112.4°C
Vapor pressure: 23.8 mg Hg at 25°C
Water solubility: 2.27 g/l water at 0°C
1.62 g/l water at 25°C
Miscible with: Acetone, benzene, carbon tetrachloride, diethyl ether, methanol, carbon disulfide

2. TEST MATERIAL:

See individual studies.

3. STUDY/ACTION TYPE:

Data submitted by Chlorpicrin Industry Panel in response to the Registration Standard dated Sept. 10, 1982:

1. Hydrolysis
2. Photodegradation in water
3. Metabolism aerobic soil

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4. Metabolism - anaerobic soil
5. Mobility - Leaching and Adsorption/desorption

4. STUDY IDENTIFICATION:

The following studies are new submittals:

Castro, C.E. and N.O. Belser. 1981. Photohydrolysis of methyl bromide and chloropicrin. J. Agric. Food Chem. 29(5):1005-1008. Acc. No. 260211.

Craine, E.M. 1985a. A hydrolysis study with chloropicrin. Research Report, Analytical 85:6. Project: WIL-48003. WIL Research Laboratories, Inc., Great Lakes Chemical Corp., Ashland, OH. Acc. No. 260211.

Craine, E.M. 1985b. An adsorption study with soil and chloropicrin. Research Report, Analytical 85:14. Project: WIL-48002. WIL Research Laboratories Inc., Great Lakes Chemical Corp., Ashland, OH. Acc. No. 260211.

Craine, E.M. 1985c. An aerobic soil metabolism study with chloropicrin. Research Report, Analytical 85:12. Project: WIL-48004. WIL Research Laboratories Inc., Great Lakes Chemical Corp., Ashland OH. Acc. No. 260211.

Craine, E.M. 1985d. An anaerobic soil metabolism study with chloropicrin. Research Report, Analytical 85:13. Project: WIL-48005. WIL Research Laboratories Inc., Great Lakes Chemical Corp., Ashland OH. Acc. No. 260211.

5. REVIEWED BY:

Hudson L. Boyd
Scientist
EAB/HED/OPP

Signature: Hudson Boyd

Date: 6/30/86

6. APPROVED BY:

Emil Regelman
Supervisory Chemist
Review Section #3, EAB/HED/OPP

Signature: Emil Regelman

Date: JUN 20 1986

7. CONCLUSIONS:

7.1 Hydrolysis - The data developed were too variable to provide a basis for concluding the significance of hydrolysis as a route of degradation of chloropicrin.

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7.2 Photodegradation in water - lack of descriptive test procedures and quantitative data (including a material balance) invalidated this study.

7.3 Metabolism - aerobic soil. Chloropicrin dissipates rapidly from sandy loam soil but the study in failing to quantify and identify degradates is useless for assessing potential problems for non-target organisms and/or rotational crops.

7.4 Metabolism - anaerobic soil. The dissipation of chloropicrin from an anaerobic soil environment, while fairly rapid, is slower than that from an aerobic soil. However, the pattern of metabolism under anaerobic conditions was not established because the degradates were neither identified nor quantified.

7.5 Mobility - Leaching/Adsorption/Desorption Experimental method, as described, was inadequate to predict the mobility of chloropicrin in soil.

Methodology was questionable: chloropicrin was mixed with soil for one hour prior to the addition of water - assumed for desorption. Equilibrium was not demonstrated.

In summary, none of the six studies reviewed were acceptable for fulfilling EPA requirements for registering pesticides and the data gaps identified in the guidance document remain unfilled.

8. RECOMMENDATIONS:

Do not accept either of the aforementioned studies for EPA guideline requirements for registering pesticides.

Hold registrant to the originally established date for submission of acceptable data.

9. BACKGROUND:

A. Introduction

Chloropicrin has been previously reviewed by Dynamac and EPA.

B. Directions for Use

Chloropicrin is a nonspecific preplant soil fumigant registered for use on terrestrial food crop ("all crops", including field, vegetable, and orchard), aquatic food crop, terrestrial nonfood crop (tobacco and ornamentals), greenhouse, and domestic outdoor

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use sites. Application rates range from 150 to 1076 lb ai/A, and the maximum preplant aeration period is 7 days. Outdoor applications generally are accomplished through the use of mechanical equipment such as chisels and plow soles attached to tractors; small indoor and outdoor soil beds may be injected using hand-held equipment. The injected soil must be immediately sealed by tamping the soil, wetting the top layer of soil, and/or covering the soil with polyethylene plastic tarpaulins.

10. DISCUSSION OF INDIVIDUAL TESTS OR STUDIES:

See attached reviews of individual studies.

11. COMPLETION OF ONE-LINER:

One-liner was not amended

12. CBI APPENDIX:

No CBI is included.